

## REMARKS

In the Office Action of December 2, 2008, the Examiner kindly pointed out that the amino acid sequences on page 19 were not identified by a sequence identifier. With these amendments they are identified as SEQ ID NO's:3 and 4. A substitute sequence listing is submitted herewith.

The Examiner has objected to the text of the specification as it contains references to websites where particular programs may be found. With the present amendments to the specification references to these websites have been deleted.

The Examiner has kindly noted that on page 12 trademarks are used with respect to various adjuvants, but they are not fully capitalized. With the present amendments the trademarks recited are capitalized.

Claim 1 is objected for depending non-elected claim 6. With the present amendments claim 1 is written as an independent claim.

Claims 1-5 and 17 stand rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. The Examiner kindly suggested that the rejection can be obviated by including the terms "isolated or purified." These terms are included in amended claim 1.

Claims 1-5 and 9-12 stand rejected under 35 U.S.C. § 112, first paragraph, for not providing a written description of other nucleic acid sequences encoding a 26 kD protein in other species of *Lawsonia intracellularis*.

With the present amendment to claim 1, a nucleic acid encoding the protein of SEQ ID NO:2 is claimed. Accordingly, it is believed this basis for rejection is overcome.

Claims 1-5 and 9-12 stand rejected under 35 U.S.C. § 112, first paragraph, as the specification is said not to be enabling for variants or fragments of SEQ ID NO: 1.

With the present amendments, the claimed nucleic acid codes specifically for SEQ ID NO: 2, and not to fragments thereof.

Claim 5 stands rejected under 35 U.S.C. § 112, first paragraph, for allegedly defining within its scope a cell with in a transgenic animal.

With the present amendment to claim 5, an isolated host cell comprising a nucleic acid according to claim 1 is claimed. It is believed that the claim can not now read on a transgenic animal.

Claims 1-5, 9-12 and 17 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement with respect to immunogenic fragments and vaccines.

With the present amendments, reference to immunogenic fragments has been deleted from claim 1 and claims to vaccines have been canceled without prejudice or disclaimer of the subject matter thereof.

Claims 1-5, 9-12 and 17 stand rejected under 35 U.S.C. § 102(e), for anticipation by Kapur et al. Kapur et al is said to teach a nucleic acid molecule that is part of the claimed sequence of nucleic acid molecule SEQ ID NO:1.

With the present amendments, the claims are no longer directed to parts of the defined nucleic acid, only the entire sequence.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) for anticipation by EMBL-FBI Database, Accession No. BH795503. This reference is relied on for teaching a nucleic acid molecule that is part of the claimed 26 kD *Lawsonia intracellularis* protein.

With the present amendments a nucleic acid encoding the entire protein, and not a fragment, is claimed.

In view of the above, with the present amendments, it is believed that claims 1-5 and 17, all claims presently in the application, are in condition for allowance. Favorable action is solicited. Should the Examiner consider that a conference would be helpful in advancing the prosecution of this application, she is invited to telephone Applicant's attorney at the number below.

Applicant does not believe that any other fee is due in connection with this filing. If, however, Applicant does owe any such fee(s), the Commissioner is hereby authorized to charge the fee(s) to Deposit Account No. **02-2334**. In addition, if there is ever any other fee deficiency or overpayment under 37 C.F.R. §1.16 or 1.17 in connection with this patent application, the Commissioner is hereby authorized to charge such deficiency or overpayment to Deposit Account No. **02-2334**.

Applicant submits that this application is in condition for allowance, and request that it be allowed. The Examiner is requested to call the Undersigned if any issues arise that can be addressed over the phone to expedite examination of this application.

Respectfully submitted,

/William M. BLACKSTONE/ Reg. #29772

William M. Blackstone, PTO Reg. No. 29772  
Chief Patent Counsel  
Intellectual Property - Animal Health  
Global Law and Public Affairs  
Schering-Plough

Intervet Inc.  
P.O. Box 318  
29160 Intervet Lane  
Millsboro, Delaware 19966-0318  
United States

(302) 934-4317 (tel)  
(302) 934-4305 (fax)

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